



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,327	03/05/2007	Shinichiro Saito	NAKAI-008US	6568
7663 7590 09/26/2011 STETINA BRUNDA GARRED & BRUCKER 75 ENTERPRISE, SUITE 250 ALISO VIEJO, CA 92656				
EXAMINER				
MURPHY, KEVIN				
ART UNIT		PAPER NUMBER		
3753				
MAIL DATE		DELIVERY MODE		
09/26/2011		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/579,327

Applicant(s)

SAITO ET AL.

Examiner

KEVIN MURPHY

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1-8 is/are pending in the application.
- 5a) Of the above claim(s) 3 and 8 is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1, 2 and 4-7 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 16 May 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-CB00)
Paper No(s) Mail Date ____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s) Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Claims 1-8 remain pending with claim 3 having been withdrawn from consideration following applicant's amendment filed 9/15/2011.

Election/Restrictions

1. Newly submitted claim 8 (claim 8 is newly submitted in that it was not previously considered because it was an improper multiple dependent claim; see office action mailed 6/17/2011) is directed to an invention that lacks unity with the invention originally claimed for the following reasons: claim 8 is directed to a combustion gas treatment method in which the common special technical features between the method and the apparatus are known in the art (Murata discloses all of the special technical features as described with respect to the anticipation rejection of claim 1 below).

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 8 is withdrawn from consideration as being directed to a nonelected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Therefore, claims 1-8 remain pending with claims 3 and 8 withdrawn from consideration.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the combination of the blaster (claim 7) used with the discharge hole in the inner tube (claim 2, Figure 2) must

be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claim 7 is objected to because of the following informalities: "said the high-temperature combustion gas" should be "the high-temperature combustion gas" or "said high-temperature combustion gas". Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. **Claim 7** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
6. Claim 7 recites the limitation "the head" in lines 3-4 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. **Claims 1, 2, 4, 5 and 7** are rejected under 35 U.S.C. 102(b) as being anticipated by Murata et al. (US Patent 6017213).
9. Regarding Claim 1, Murata discloses (Figures 4-6 especially) a combustion gas extraction probe **5** for extracting a high-temperature combustion **GT** gas while cooling said high-temperature combustion gas with a low-temperature gas **CA** (col. 3, line 62—col. 4, line 7) characterized by making said low-temperature gas **CA** flow in a direction that is substantially perpendicular to a sucking direction of the high-temperature combustion gas (via inlets **28**) and is toward a center of flow of said high-temperature combustion gas (see the plurality of inlets **28** providing the cooling air to enter in a direction substantially perpendicular to the sucking direction of the high temperature gas) such that said low-temperature gas **CA** reaches a central portion of said high-

temperature combustion gas **GT** for mixed cooling (see low temperature gas **CA** reaching a central portion of the high-temperature combustion gas as best shown in Figure 6). It is noted that the claim does not require the gas to reach the centermost portion as argued by applicant; instead the claim only requires the gas to reach a "central portion" of the high-temperature combustion gas (which is clearly achieved as shown in Figure 6).

10. Regarding Claim 2, Murata further discloses an inner tube **10** in which the high-temperature combustion gas **GT** flows; an outer tube **12** surrounding said inner tube; a low-temperature gas discharge hole **28** provided in said inner tube **10**; and a low-temperature gas supply means (supply of cooling air **CA**) for supplying the low-temperature gas between the inner tube **10** and the outer tube **12**, and discharging the low-temperature gas from the discharge hole **28** into the direction that is substantially perpendicular to the sucking direction of the high-temperature combustion gas and is toward the center of the flow of said high temperature combustion gas (as best shown in Figure 6).

11. Regarding Claim 4, Murata further discloses a plurality of said low-temperature gas discharge holes **28** are provided, and individual discharge holes are rotationally symmetrically arranged at substantially the same positions from a head **25** of the probe in the high-temperature combustion gas sucking direction (see holes **28** provided in circumferentially opposite positions located substantially the same distance from the head as best shown in Figure 6).

12. Regarding Claim 5, Murata further discloses a plurality of low-temperature gas discharge holes **28** are arranged in stages in the high-temperature combustion gas sucking direction (i.e. the holes **28** are provided along the length of the inner tube **10** in the same manner as achieved by applicant).

13. Regarding Claim 7, Murata further discloses a blaster (the flow path through the hole **26** is seen as a "blaster" as it provides a blast of cooling air through the small openings to the head of the probe in the same manner in which applicants flow path is a "blaster") injecting a compressed air (through **26**) in an opposite direction to the sucking direction (see air flow of **CA** through holes **26** at the top of Figure 6 in an opposite direction to the curved direction of flow of **GT**) of the high-temperature combustion gas **GT** at the head **25** of the probe **5**.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

16. **Claim 6** is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Murata et al. (US Patent 6017213).

17. Regarding Claim 6, Murata is seen as disclosing the flow speeds of the low-temperature gas and the high-temperature combustion gas are capable of being not less than 40 m/s and not more than 100 m/s (this claim does not further recite any structure of the claimed device, and the device of Murata is seen as capable of having the recited flow speeds of the high and low temperature gases flow through the device). Alternatively, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the gases such that they flow at any desired speeds, including speeds of not less than 40 m/s and not more than 100 m/s, for the purpose of ensuring adequate mixing of the gases.

Response to Arguments

18. Applicant's arguments filed 9/15/2011 have been fully considered but they are not persuasive.

19. Applicant argues that Murata does not disclose the low-temperature gas reaches a central portion of the high temperature gas. The examiner respectfully disagrees. Regarding applicant's arguments that Murata discloses a spiraling flow path as shown in Figures 2 and 3, it is noted that the examiner has relied on the embodiment disclosed in Figures 4-6 in rejecting the claims. Regarding applicant's arguments that Murata's cooling air CA in Figures 4-6 only reach peripheral portions of the inner passageway

and do not reach the central portion, it is noted that the claim does not require the gas to reach the centermost portion as argued by applicant; instead the claim only requires the gas to reach a "central portion" of the high-temperature combustion gas. Therefore, the cooling air clearly reaches a central portion as CA extends to a portion directly surrounding the centerline as shown in Figure 6. Additionally, it is noted that the recitation that the cooling air reaches the center portion is seen to be a function of the flow characteristics of the cooling air relative to the high-temperature gas. Therefore, the structure of the probe is seen at least as being capable of achieving the result that the low-temperature gas reaches a central portion of the high-temperature gas by increasing the velocity of the low-temperature gas.

Conclusion

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEVIN MURPHY whose telephone number is (571)270-5243. The examiner can normally be reached on Monday-Friday 7:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Hepperle can be reached on 571-272-4913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/STEPHEN M HEPPERLE/
Supervisory Patent Examiner, Art
Unit 3753

/KEVIN MURPHY/
Examiner, Art Unit 3753
9/21/2011